Public
Health
Division

Measles Activity in Ontario and Worldwide: For Health Care Providers

During the summer months, there will be an anticipated increase of travel within Canada and internationally. As a result, it is important to remain vigilant for importations of measles from regions with high disease activity, as well as other vaccine preventable diseases.

Ontario measles activity
In Ontario, 11 cases of measles have been reported to date since June 6, 2011. Cases are due to importation of measles from exposures in the UK, India, New York City and France with some secondary spread within Ontario.

National activity-Quebec
In Canada, an outbreak is ongoing in Quebec with 254 confirmed reported cases as of June 6, 2011. Confirmed cases are in eight regions with the majority of cases in central east Quebec in Mauricie and Centre-du-Quebec. The first reported cases were among travellers that acquired the infection while in Europe, in particular, France. Subsequently, local transmission occurred.

Global activity[1]
Recently, there has been increased measles activity reported worldwide with outbreaks in the Americas (USA, Peru and Guatemala), parts of Africa (Congo and Zambia), Asia (Bangladesh and India) and Europe (France, Spain, Switzerland, UK, and Germany).

Preventative measures

- Ensure all travellers are up-to-date with their immunizations prior to travel. Please refer to the *Publicly Funded Schedules for Ontario*.
- Travellers should be up-to-date on measles immunization regardless of their travel destination:
  - ***Infants and children:***
    - Two doses of measles, mumps, rubella (MMR) vaccine are recommended for children. The first dose of MMR vaccine should be given on or after the first birthday and the second dose should be given at 18 months of age. The second dose of MMR vaccine may be given as early as 28 days from the first dose.
    - Refer to the travel health information from the Public Health Agency of Canada (http://www.phac-aspc.gc.ca/tmp-pmv/index-eng.php) for recommendations regarding children under one year of age who are traveling to regions where measles is endemic, a concern or where outbreaks are occurring. It is important assess the risk and benefits of providing MMR vaccine to children who are under one year of age on a case by case basis.

[1]http://www.who.int/immunization_monitoring/diseases/measlesreportedcasesbycountry.pdf

Ontario

- ***Adolescents and adults:***
  - A second dose of MMR vaccine is recommended for those who plan to travel internationally.
  - Adults may be protected against measles if they were born before 1970 or have proof of immunity (e.g. through blood testing).

Diagnosis of measles

A diagnosis of measles should be considered in any person with a generalized maculopapular rash, fever and cough, coryza and/or conjunctivitis. Laboratory diagnosis of measles is required for all sporadic (non-outbreak related) cases.

Since indigenous measles has been eliminated in Canada and measles has occurred rarely in Ontario since 1997, laboratory testing of suspect measles cases must include both serology and virus isolation/detection:

Initial lab testing:

a) **Virus isolation/detection:** A nasopharyngeal swab or aspirate, or a throat swab obtained as soon as possible and optimally within 4 days after the onset of rash, and /or approximately 50 ml of urine obtained as soon as possible and optimally within 7 days after the onset of rash for viral isolation and nucleic acid amplification testing.

   Specimens collected outside this time period may still be positive within a two-week window period after the onset of rash if a molecular detection method is used. Specimens sent to the National Microbiology Laboratory for nucleic acid testing (NAT) can also be used to determine the genotype if the measles virus is detected by NAT.

b) **Acute serology**: A blood specimen, to test for measles specific antibodies (IgM and IgG) at the first visit, optimally obtained on day 4 after the onset of rash and within 7 days after rash onset.

   Note: If the acute (initial) serology results in a person with clinical symptoms of measles and known or suspected exposure to measles show low, indeterminate or negative IgM and IgG, both tests should be repeated no less than 3 days after the acute sample to monitor the expected rise in antibody level which would confirm recent infection.

Follow-up lab testing:

Convalescent serology: A second blood specimen drawn 10 to 20 days after the acute sample to check for seroconversion or a significant rise in measles specific IgG antibodies between acute and convalescent sera. Seroconversion or a significant rise in IgG antibody titre is indicative of recent infection.

Note: When requesting measles specific IgM and IgG testing, please provide relevant clinical information on the lab requisition form and the purpose of the testing i.e. suspect measles, recent vaccination history and recent travel history.

Expected time to receive results

- A few days for blood test results.
- Up to a week for PCR results.

Note: Please ensure that your local public health unit is aware of all individuals who are being tested for measles.

Important information

Public Health Agency of Canada's travel health notice for measles: http://www.phac-aspc.gc.ca/tmp-pmv/thn-csv/measles-rougeole-eng.php

References

1. Bellini WJ, Icenogle JP. Measles and rubella viruses. In Murray PR, Editor. *Manual of Clinical Microbiology, 8th Edition*. ASM Press, Washington, D.C.; 2003.

2. Heymann DL, editor. Control of Communicable Diseases Manual, 18th edition. American Public Health Association. Washington, D.C.; 2004.